

AMENDMENTS TO THE CLAIMS

1. (currently amended) A negative charge pump formed on a semiconductor substrate comprising:

a power supply having ~~having~~ a first terminal connected to said substrate and a second terminal connected to a high voltage rail;

~~an output capacitor connected between said high voltage rail and said substrate;~~

a plurality of charging capacitors connected between said high voltage rail and said substrate, said charging capacitors connected to said high voltage rail by a first set of transistor switches and connected to said substrate by a second set of transistor switches;

an output capacitor connected between said high voltage rail and said charging capacitors, said output capacitor connected to at least one of the said charging capacitors by a third set of transistor switches;

wherein said second and third sets of switches are NMOS transistors and said first set of switches are PMOS switches.

2. (original) The negative charge pump of Claim 1 further including a supervisory circuit operative in a shutdown mode to catch the output voltage to said negative supply voltage.

3. (original) The negative charge pump of Claim 1 wherein at least one of said second set of switches is formed from a plurality of transistors that are staggered in switching on during a soft start mode.